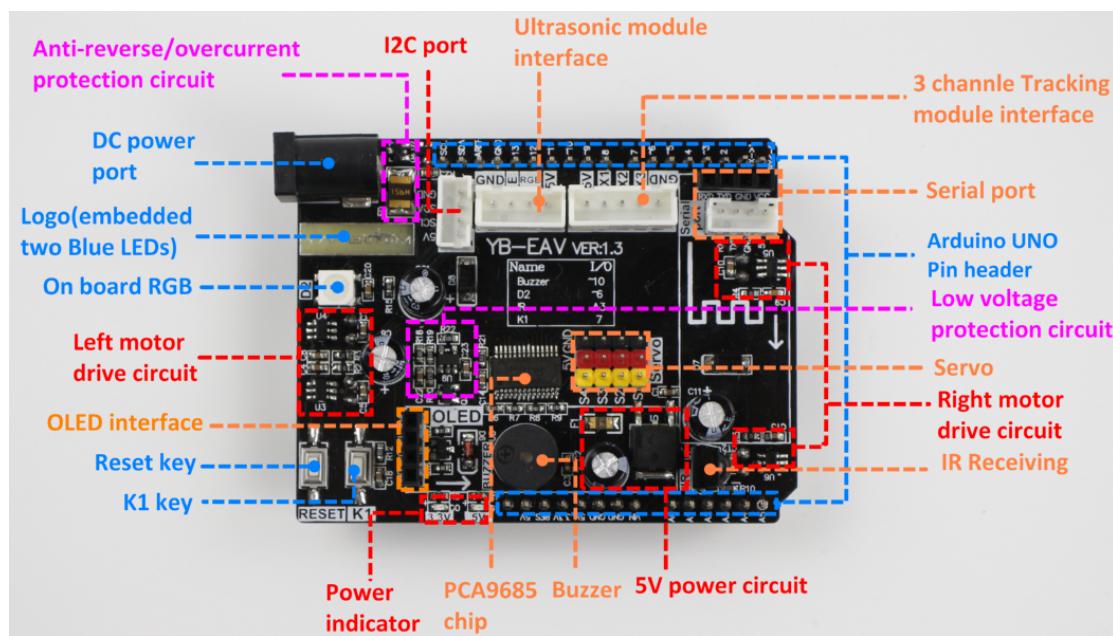


Introduction of Uno robot Drive expansion board

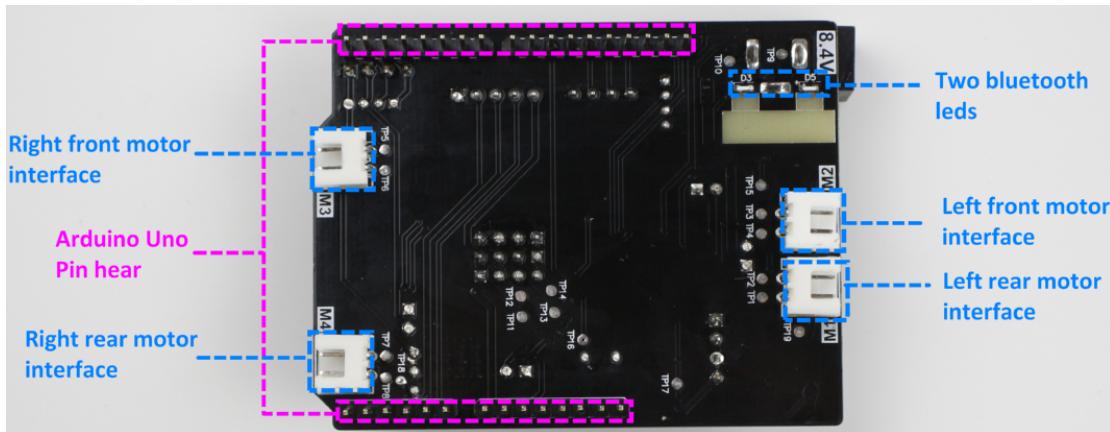
Detail:

On board I/O device: RGB lamp, button, passive buzzer, infrared receiver	Motor interface: 4-channel motor interface (Current: single channel 0.8A, MAX 2A)
Expansion interface: 3-channel tracking module, ultrasonic module, WIFI camera module, Bluetooth module, I2C and 12832 OLED interface are reserved, UNO board IO port	
Dedicated interface: Uno board interface	Power supply interface: DC5.5*2.1
Servo interface: 4-channel servo (voltage: 5V, MAX current: 0.8A)	Protection circuit: anti-reverse protection, over-current protection, battery low voltage protection
Reduction voltage: 78M05	Servo Drive: PCA9685
Motor solution: TT geared motor	Output voltage: 5V
Input voltage: 7.4V~8.4V	Input Application area: Uno Smart Car, Robot Arm, etc.

Front:



Back:



Introduction of Onboard interface and component:

1. Key



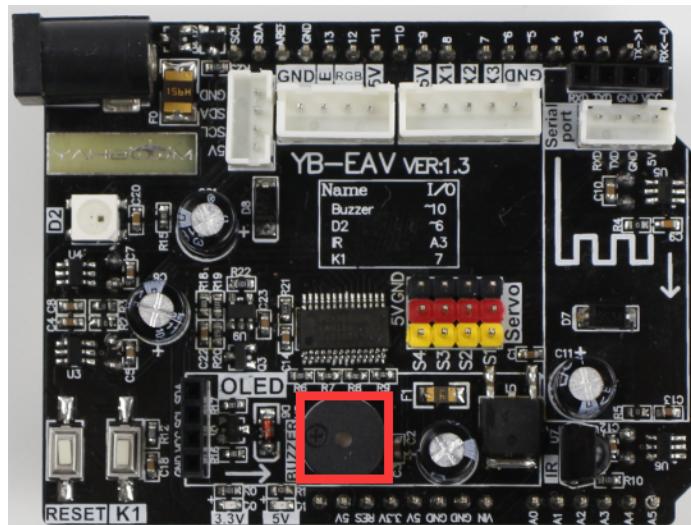
The on board reset key and K1 key on this expansion board.

According to the hardware interface manual, we know that the K1key is connected to the Pin7 of the Uno board.

When the button is pressed, the Pin 7 pin is low; when the button is not pressed, the Pin 7 pin is high.

Please refer to the 《Key Control RGB Lights》 folder for the reference code.

2. Buzzer

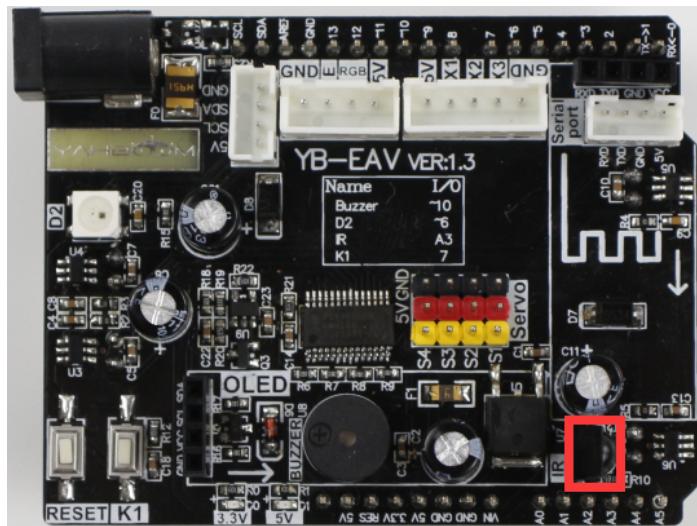


The passive buzzer is used here.

According to the hardware interface manual, we know that the buzzer is connected to the Pin10 of the Uno board.

Please refer to the 《Whistle》 folder for the reference code.

3. IR Receiving

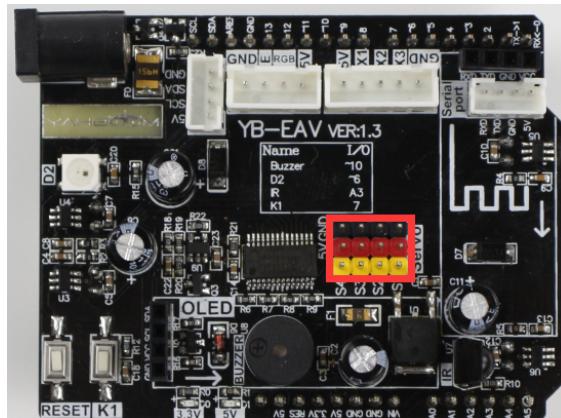


The infrared receiver can be used with an infrared remote control.

According to the hardware interface manual, we know that the infrared receiving is connected to the A3 pin of the Uno board.

Please refer to the 《IR control》 folder for the reference code.

4. Servo interface



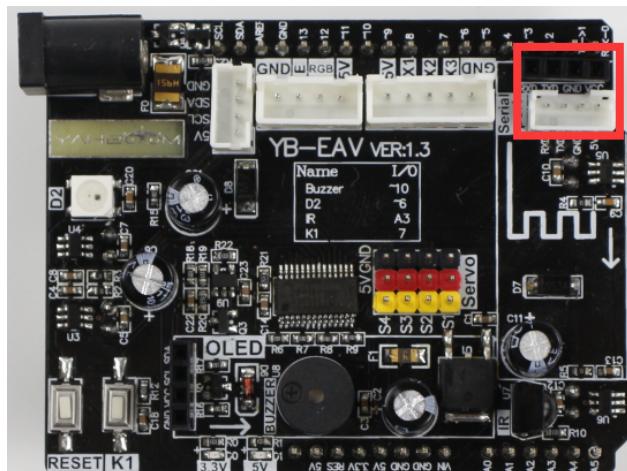
This expansion board possess 4 servo interface : S1, S2, S3, S4.
According to the hardware interface manual, we know that the 4 servos will be driven by PCA 9685 chip, PCA9685 chip and Uno board adopt IIC communication.

Pin connection as shown below.

PCA9685 chip	Servo interface
LED0	S1
LED1	S2
LED2	S3
S1(3)	S4

Please refer to the [«Control Servo»](#) folder for the reference code.

5. Two serial port



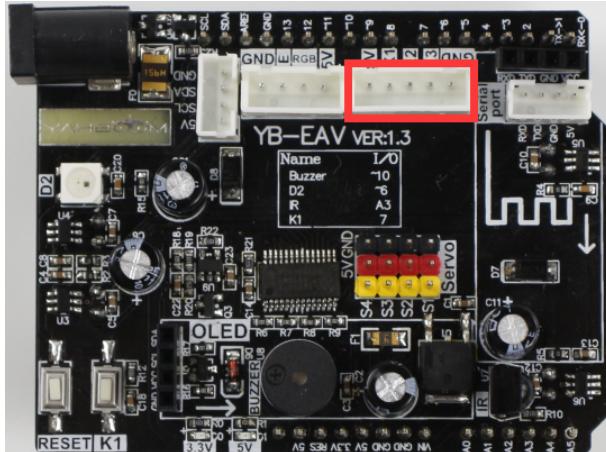
There are two serial port, user can insert Bluetooth module or connect Wifi camera module by DuPont line and PH2.0 4pin cable.
According to the hardware interface manual, we know that Pin connection as shown below.

Serial port	Uno board
VCC	5V

GND	GND
RX	0
TX	1

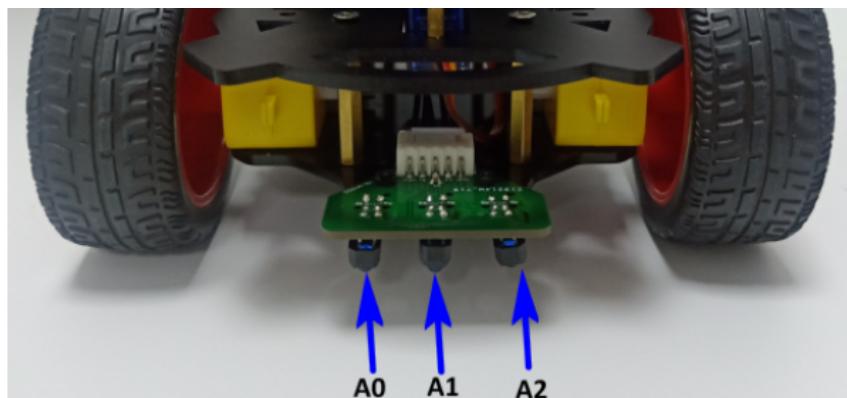
Please refer to the 《Wifi Control》 folder for the reference code.

6. 3 channel tracking interface



We adopt XH2.54 5pin socket, it can connect 3 channel tracking module. According to the hardware interface manual, we know that Pin connection as shown below.

Tracking module interface	Uno board
X0	A0
X1	A1
X2	A2



Please refer to the 《Tracking》 folder for the reference code.

7. Ultrasonic module interface



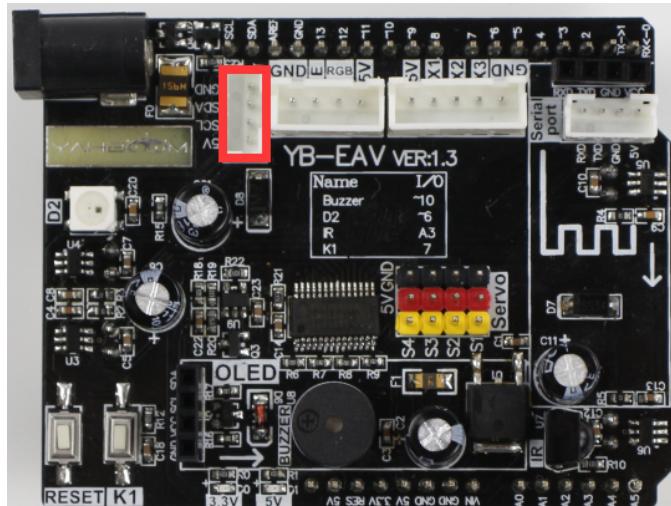
We use adopt XH2.54 Pin socket, it can connect a series of ultrasonic modules: color RGB ultrasonic module, flat ultrasonic module, vertical ultrasonic module and so on.

According to the hardware interface manual, we know that pin connection as shown below.

Ultrasonic module interface	Uno board
RGB	11
ECHO	12

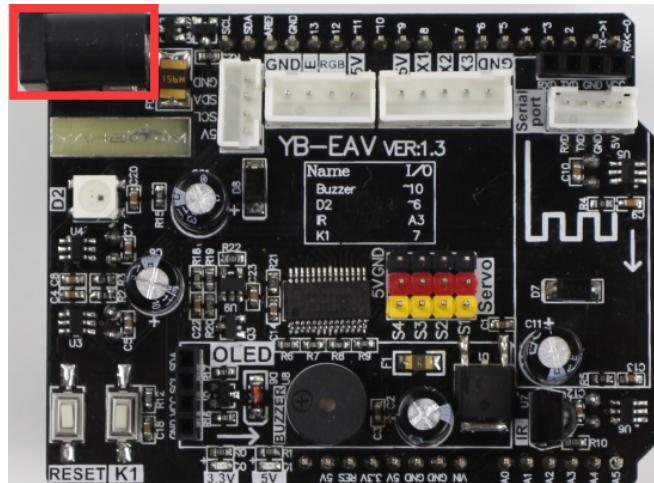
Please refer to the [«Ultrasonic Ranging»](#) folder for the reference code.

8. I2C interface



We adopt PH2.0 4 Pin socket, it can connect other service with IIC.

9. DC power interface



External power supply 8.4V.

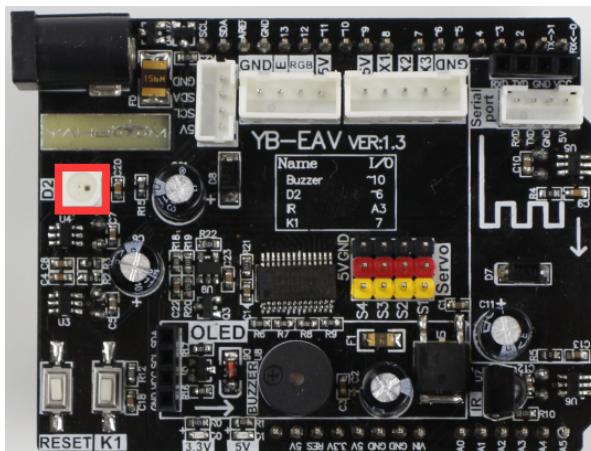
10. Logo blue light



Two blue LEDs are embedded here. According to the hardware interface manual, the LED is driven by the LED7 pin of the PCA9685 chip.

Please refer to the 《Car advance》 folder for the reference code.

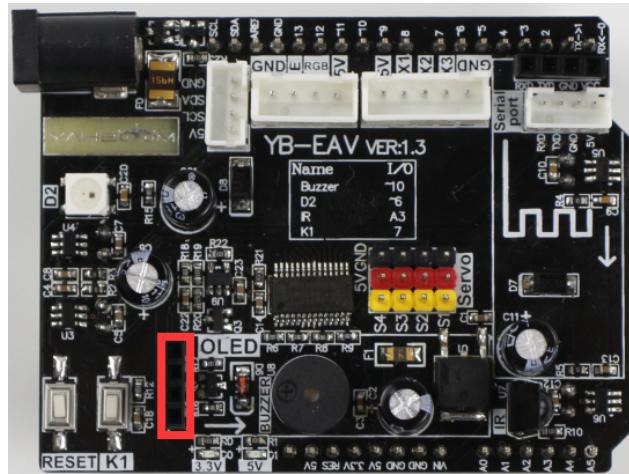
11. On board RGB light



We adopt WS2812 here. According to the hardware interface manual, we know that On board RGB light is driven by Pin6 of Uno board.

Please refer to the 《Onboard RGB》 folder for the reference code.

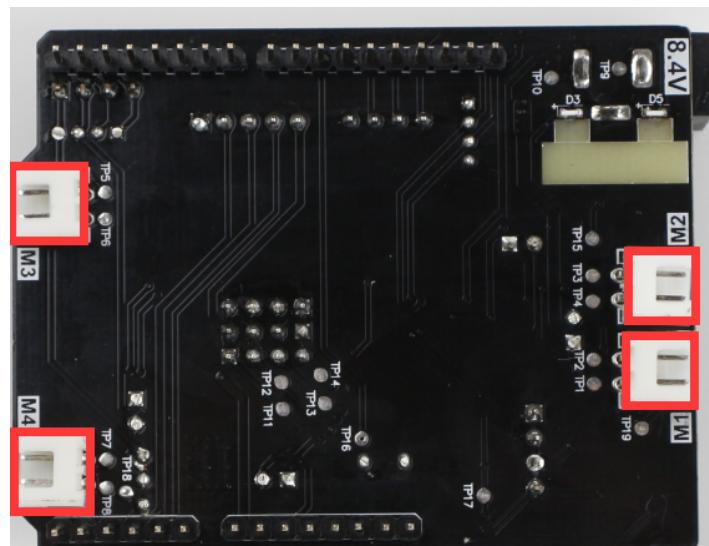
12. OLED display interface



This interface adopt IIC communication, it can connect 12832OLED.

Please refer to the 《OLED》 folder for the reference code.

13. 4 channel motor interface



These motor are driven by PCA9685 chip.

According to the hardware interface manual, we know that pin connection as shown below.

Port	Motor	PCA9685 chip	Function
M1	Left rear motor	RINB(15)	Control left rear motor forward
		RINA(14)	Control left rear motor reverse
M2	Left front motor	LINA(13)	Control left front motor forward
		LINB(12)	Control left front motor reverse
M3	Right front motor	LED10	Control right front motor forward
		LED11	Control right front motor reverse
M4	Right rear motor	LED8	Control right rear motor forward
		LED9	Control right rear motor reverse

Please refer to the 《Car advance》 folder for the reference code.